



June 28, 2001

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Mr. William H. Leighty
Director
Virginia Retirement System
2500 East Main Street
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Dear Bill:

Subject: Response to Actuarial Audit Exposure Draft

This is a submission of Watson Wyatt's response to William M. Mercer, Inc.'s exposure draft regarding the findings during their actuarial audit of the June 30, 2000, actuarial valuation of the Virginia Retirement System (VRS). Watson Wyatt views this audit as a constructive engagement, which enables VRS to be examined by a second, independent actuary. Below are our comments regarding certain items that were noted in the draft report.

Actuarial Cost Method

- ♦ An actuarial cost method allocates the present value of all future benefits (ie, the total actuarial liabilities), calculated independently of the cost method, between past service and future service. In other words, after the total liability is determined, the actuarial cost method attributes a portion to service already performed by the participants (actuarial accrued liability) and the remainder to service to be performed in the future (present value of future normal cost).

The actuarial accrued liability in excess of the actuarial value of assets (unfunded actuarial accrued liability) is funded by amortizing the amount over the funding period. The present value of future normal cost is funded as a level percentage of annual payroll (normal cost) paid throughout the future working lifetime of the active participants.

The relationship between the length of the funding period and the measure of the average future working lifetime of the active participants is a key consideration in how the allocation between past and future service affects the total required contribution amount. For example, if the funding period and the average future working lifetime of the active participants are equal, there is no difference in total contributions between different cost method allocations of the total liability. On the other hand, if the average future working lifetime is significantly longer than the funding period, a greater allocation of liabilities to future service will result in a reduction to the total contribution, and vice versa.



The Entry Age Normal Cost Method used in the actuarial valuation of VRS applies a technique intended to enhance the stability of the contribution rate determined in successive valuations. Specifically, this technique allocates the portion of the liabilities to future normal cost based upon the characteristics of the newest members of the systems.

This group of new entrants is identified during the experience study, and the normal cost rate determined for this new entrant group is used as the rate applicable to the entire group of participants. The normal cost rate so determined remains unchanged until the next experience study (4 years) provided that the benefit provisions and actuarial assumptions each remain unchanged.

If there is a difference between the normal cost (expressed as a percent of pay) for the current group of active employees as a whole and for the new entrant group, this means that the cohort of new hires has a different average age at hire than those members hired in the past. If normal cost rate is higher, then they are being hired at an older average age. If the normal cost rate is lower, then they are being hired at a younger average age.

In either case, the result is that the normal cost rate for the group as a whole will gravitate over time towards the normal cost rate for the new entrant group as existing active members die, terminate, retire, or become disabled and are replaced by the (on average, older or younger) new entrants. Because of this inevitable trend, our methodology recognizes in advance where the normal cost rate is heading. It is in this respect that it facilitates more stable contribution rates.

With respect to the methodology's application to the local employers, individually calculating a normal cost for each unit would be contrary to VRS's on-going efforts to comply with its legal mandate and to bring more stability to their contribution rates, especially for the smaller units. In addition, it would greatly increase the complexity (and therefore the expense) of their valuation process. It should also be noted that for these units, their normal cost rate is a weighted average of the rate for general employees and for police officers, depending on the extent of the relative numbers of each such employee group for each unit and whether the unit has adopted the special LEOS coverage for its uniformed officers.

Mercer comments that stabilizing normal cost rates may not really stabilize contribution rates during a period of time when the volatility of investment performance undermines the intended results, as has occurred during the last several years. While it is a correct observation that recent investment results have caused non-stable (decreasing) rates, the same patterns would have been seen even if their suggested approach had been used. Therefore recent trends should not influence long term goals.



This entire area of how to allocate the total actuarial liability between accrued liability, normal cost, and future normal cost is very complex technically. We have 25 years of experience with large state plans to draw on in recommending valuation methodology for these large plans. We do utilize Mercer's described approach in some of the plans that we serve. Our decision as to which approach to apply is based on the goals and objectives of each plan and on their particular circumstances. It continues to be our opinion that our current methodology best suits VRS's and the Commonwealth's needs.

Actuarial Asset Method

- ◆ We agree with the finding of the audit actuary and will incorporate this change in the 2001 actuarial valuations. The effect of this change is not material. The change will develop an actuarial value of assets consistent with the stated methodology. This is an example of the benefit of undergoing periodic actuarial audits.

Actuarial Assumptions

◆ Death after retirement (State Police)

- Due to the relatively small population size studied, Watson Wyatt does not believe there is enough credibility in the experience to warrant a change in assumptions. Furthermore, due to the small percentage of retirees who are female (approximately 10%), we also believe that both genders should continue to be pooled to increase the credibility of that experience. In the future, general distinct assumptions will be examined and considered as the proportion of female police officer retirees becomes statistically significant.

It should not be interpreted that we ignore female mortality. Instead, we use combined results to develop a unisex assumption until there is enough data to support a sex-distinct assumption. As commented above, when there is sufficient sex-distinct data, we will recommend sex-distinct assumptions.

◆ Pre-Retirement Death

- During the experience study, all active employees were combined to determine the system-wide experience for mortality, due to the low incidence of death among the active members. We found there was still not enough credibility to warrant a change in assumptions.



♦ **Retirement Options on Termination**

- Regarding the change in the assumption of the percentage of members electing the most valuable benefit (return of contributions with interest vs. an annuity) from 70% to 100%, the actual VRS experience was not examined. The new assumption, however, is more consistent with the assumption used by other large statewide retirement systems.

While it might be viewed as somewhat conservative, what it really implies is that the terminating member makes the correct economic choice for himself or herself. We believe that this is a reasonable assumption.

♦ **Disability**

- We have continued the methodology for valuing the disability benefit that was used by VRS's prior actuary. That methodology does ignore the possible impact of social security on the non-VSDP disability benefit, as Mercer points out. The reason is one of materiality. Its inclusion would not materially change the overall contribution rate calculation or the amount of the unfunded liability because of the size of the non-VSDP disability benefit relative to the total liability of the group.

More recently, there was insufficient data available to determine the percentage of disability occurrences that qualified for Social Security benefits. Knowing some disabled members would qualify for Social Security benefits, our current approach of not recognizing any social security offset may be conservative, but it ensures that the disability benefit liability will not be understated. In addition, because of the relative size of the liability versus the total liabilities, any recognition would not have a material impact.

We agree with Mercer's comment that it may be worthwhile to analyze actual experience in the future if the information regarding actual experience is available. We will incorporate such an investigation into our next experience study of VRS if the VRS Board of Trustees believes that it will add value to the reliability of the results. We would point out, however, that as the VSDP grows in coverage, the old disability benefit affected by this change becomes smaller and smaller in its significance.

♦ **Disclosure of Assumptions**

- We concur with the finding of the audit actuary. In the future, Watson Wyatt will better disclose the assumption concerning the percentage of disabilities assumed to qualify for Social Security benefits and the assumed beneficiary age for married active members. We will also modify the heading for the table containing the termination rates to make the table easier to understand.



♦ **Valuation Methods**

- After discussions with VRS concerning the credibility of the calculated months of credited service provided in the valuation data, we will incorporate the use of this measure of service in determining benefit amounts.
- With respect to Mercer's suggestion of including some recognition of future service purchases and in spite of their comment that "some large systems have adopted specific assumptions", we have a wide knowledge of most of the large state-wide retirement systems, and we are not aware of any specific such examples. In addition, it should be noted that the new service purchase provisions that will go into effect for VRS on July 1, 2001, will lessen the actuarial impact of such purchases. If, however, the Board would like us to include such an allowance in our methodology, we can certainly study the utilization and the cost and incorporate this feature into our procedures. The basic question the Board should address is whether the additional expense and complexity of this change is worth the change it might produce in the results.

♦ **Actuarial Report**

- While we agree with Mercer's comments concerning Actuarial Standards of Practice (ASOP) #4, it should be noted that it does not strictly apply to the summary communications that go to each local employer unit since those communications are for informational purposes only and are not formal valuation reports.

Mercer's comments, however, raise an interesting point. Since the System's prior actuary did not prepare a single, comprehensive report for the local units, we have not been preparing one. A better procedure might be to produce a single comprehensive report of all political subdivisions. This comprehensive report would contain the assumptions, summary of benefits and the signature of the qualified actuaries. The summaries produced for each political subdivision would remain unchanged. If the Board so requests, we can begin this procedure during the next valuation cycle.

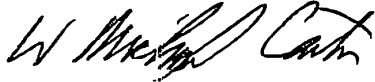
Overall we are pleased with the results of the audit and believe the duties of the audit actuary were performed professionally and thoroughly. We find their comments constructive and believe they performed an important and necessary task that improves the actuarial services provided to VRS. We are especially pleased that they are in general agreement with our recommended assumptions and that they state "that we found the work to be reasonable and performed in accordance with generally accepted actuarial principles and practices."

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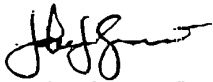


If you have any questions concerning our response, please feel free to call us.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Michael Carter'.

W. Michael Carter, FSA
Vice President

A handwritten signature in black ink, appearing to read 'John Garrett Jr.'.

John Garrett Jr., ASA
Actuary

nlb

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